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FLETCHER, YODER & VAN SOMEREN P. O. BOX 692289 HOUSTON, TX 77269-2289			EXAMINER WU, RUTAO	
			ART UNIT	PAPER NUMBER

3639

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/682,246	BHATT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rutao Wu	3639	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-44 are objected to because of the following informalities: single quote (") is used instead of apostrophes (') to indicate the possessive case in the claims.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The invention is question here does not appear that it can operate as intended without undue experimentation, especially since there are no details in the claims as to how the calculations are performed. The calculation uses different models which could be a broad range of information.
4. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make

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and/or use the invention. Claim 23 is written in "single means claim" format since they recite only one element to do all the functions recited. The claim is not written in "means-plus-function" language, however, in *Fiers v. Revel*, (CAFC) 25 USPQ2d 1601, 1606 (1/19/1993, the CAFC affirmed a rejection under 35 USC 112 of a claim reciting a single element that did not literally use "means-plus-function" language. Claim 23 draws to any "Computer System", regardless of construct, that performs the function recited. This parallels the fact situation in *Fiers* wherein "a DNA" and a result was recited. The CAFC stated in *Fiers* at 1606 "Claiming all DNA's that achieve a result without defining what means will do so is not in compliance with the description requirement; it is an attempt to preempt the future before it has arrived". See also *Ex parte Maizel*, (BdPatApp&Int) 27 USPQ2d 1662, 1665 and *Ex parte Kung*, (BdPatApp&Int) 17 USPQ2d 1545, 1547 (1/30/1989) where the claims at issue were rejected for being analogous to single means claims even though "means" was not literally used. Thus, claim 23 yields a "computer system" that achieves a result without defining what will do so.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 23, only the structural element to the "analysis tool" is a computer system. The other limitations of the claim are drawn to just stored data. It is not clear what the analysis tool is comprised of. A computer system alone cannot conduct these steps without being used in combination with software or computer program.

***Claim Rejections - 35 USC § 101***

7. As per Claims 1-22, these claims recite a series of steps and are considered for the purpose of analysis under 35 U.S.C. 101 as reciting a series of steps. The claims do not recite a pre- or post-computer activity but merely perform a series of steps of collecting, calculating and convoluting data such as the failure rate of a product, the product's operating life time, and cost of the product over time, and is directed to non-statutory subject matter. A process is statutory if it requires physical acts to be performed outside of the computer independent of and following the steps performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure (*Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8). Further, the claims merely manipulate an abstract idea (collecting, calculating and convoluting data) or perform a purely mathematical algorithm without limitation to any practical application. A process which merely manipulates an abstract idea or performs a purely mathematical algorithm is non-statutory despite the fact that it might have some inherent usefulness (*Sakar*, 558 F.2d at 1335, 200 USPQ at 139).

Furthermore, in determining whether the claimed subject matter is statutory under 35 U.S.C. 101, a practical application test should be conducted to determine whether a "useful, concrete and tangible result" is accomplished. See *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1359-60, 50 USPQ2d 1447, 1452-53 (Fed. Cir. 1999); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1600 (Fed. Cir. 1998).

An invention, which is eligible or patenting under 35 U.S.C. 101, is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The fundamental test for patent eligibility is thus to determine whether the claimed invention produces a "use, concrete and tangible result". The test for practical application as applied by the examiner involves the determination of the following factors"

(a) "Useful" – The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

- i. the utility need not be expressly recited in the claims, rather it may be inferred.
- ii. if the utility is not asserted in the written description, then it must be well established.

(b) "Tangible" – Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a

mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. 101. In *Warmerdam* the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium, which enabled its functionality to be realized.

(c) "Concrete" – Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

The claims, as currently recited, appear to be directed to nothing more than a series of steps including collecting, calculating and convoluting data such as the failure rate of a product, the product's operating life time, and cost of the product over time without any useful, concrete and tangible result and are therefore deemed to be non-statutory. While these numbers may be concrete and/or tangible, there does not appear to be any useful result.

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-5, 8, 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Karmarkar, U.S., "future Costs of Service Contracts for Consumer Durable Goods," AIEE Transactions, 10, pp. 380-387 (1978).

**Referring to claim 1:**

A method of quantifying the economic effect of providing a product with a product warranty, comprising the acts of:

Developing a statistical model of a product's failure rate; (pg 381, ¶2; pg 383, "The Mixed Exponential TTF Model", ¶1; pg 384, ¶1)

Developing a model of the cost over time of a product having a product warranty; and (pg 381, ¶2,3

Calculating an effective cost of the product from the statistical model of a product's failure rate and the model of the cost over time of a product having a product warranty. (pg 381, ¶2; ph 386, "Conclusions and Extensions" ¶1)

**Referring to claim 2:**

The method as recited in claim 1, wherein calculating comprises performing a convolution of the statistical model of a product's operating life and the model of the cost over time of a product having a product warranty. (pg 380, ¶2, pg 381, ¶3)

**Referring to claim 3:**



The method as recited in claim 1, wherein developing a statistical model of a product's life comprises collecting data from previous failures of the same or similar products. (pg 385, i and ii)

**Referring to claim 4:**

The method as recited in claim 3, wherein developing a statistical model comprises calculating a cumulative probability of failure of the product as a function of time. ("The Mixed Exponential TTF Model", ¶1; pg 384, ¶1)

**Referring to claim 5:**

The method as recited in claim 1, wherein the model of the cost over time of a product includes a cost associated with a failure of a product during a warranty period. (pg 381, ¶2, ¶3)

**Referring to claim 8:**

The method as recited in claim 1, wherein developing a model of the cost over time of a product having a warranty comprises developing a model of the cost over time of a product having a product warranty for each of a plurality of product warranties; and calculating comprises calculating the effective cost of a product having a product warranty for each of the plurality of product warranties. (pg 386, "Conclusions and Extensions" ¶1)

**Referring to claim 9:**

Karmarkar does not disclose the following,

The method as recited in claim 1, further comprising the act of graphically representing the effective cost of a product as a function of the product warranty.

However, the examiner submits that graphical output of the results of the calculation is an inherent function of the article. Karmarkar provides specific motivation by providing several graphs representing various elements and results of the calculations in the article.

10. Claims 12-15, 18-19, 21, 31-33, 35, 37-40 rejected under 35 U.S.C. 102(b) as being anticipated by Balcer, Y and I. Sahin, "Replacement Costs under Warranty; Cost Moments and Time Variability," Oper. Res., 34(1986), 554-559.

**Referring to claim 12:**

A method of quantifying the economic effect of providing a product with a product warranty, comprising the acts of:

Developing a statistical model of a product's failure rate; (pg 555, Examples.)

Developing a model of the actual selling price of a replacement product over time; and (pg 555, Examples; Table I)

Calculating an effective selling price for a replacement product from the statistical model of a product's operating life and the model of the actual selling price of a replacement product over time. (pg 555, Examples; Table I)

**Referring to claim 13:**

The method as recited in claim 12, wherein calculating comprises performing a convolution of the statistical model of a product's operating life and the model of the selling price of a replacement product over time. (pg 555, Examples)

**Referring to claim 14:**

The method as recited in claim 13, wherein the convolution produces a cumulative probability that the replacement product will have an actual selling for each of a plurality of actual selling prices. (Table I)

**Referring to claim 15:**

The method as recited in claim 14, wherein calculating an effective selling price of a replacement product comprises producing a weighted average of the plurality of actual selling prices and the cumulative probabilities.

**Referring to claim 18:**

The method as recited in claim 12, wherein the model of the selling price of a replacement product over time includes discounts in the selling price of the replacement product associated with the product warranty. (pg 554, ¶1)

**Referring to claim 19:**

The method as recited in claim 12, wherein developing a model of the actual selling price comprises developing a model of the actual selling prices of a replacement product for each of a plurality of product warranties and calculating comprises calculating the effective selling price of a replacement product from the convolutions for each of the plurality of product warranties. (pg 554, Pro Rata Warranty)

**Referring to claim 21:**

Balcer et al does not expressly disclose the following:

The method as recited in claim 12, further comprising the act of calculating an effective cost of a product having a warranty.

In Balcer et al's article, it is disclosed that Blischke and Scheuer (1875, 1981) have analyzed both types of policy with regard to long-run, time-average costs to the buyer, and profits to the seller (pg 554, ¶2). Therefore, it is inherent that the producer know what the effective cost of a product is having a warranty to be able to calculate the profits.

**Referring to claim 31:**

A computer program stored in a tangible medium, wherein the program enables a computer system to provide a user with quantitative economic data for a product as a function of a warranty on the product. (Balcer et al complete article)

**Referring to claim 32:**

The computer program stored in a tangible medium as recited in claim 31, wherein the quantitative economic data is an effective cost of the product as a function of the warranty. (pg 554, Pro Rata Warranty)

**Referring to claim 33:**

The computer program stored in a tangible medium as recited in 31, wherein the quantitative economic data is an effective selling price of a replacement product as a function of warranty. (pg 554, ¶1)

**Referring to claim 35:**

The computer program stored in a tangible medium as recited in 31, wherein the computer program directs the computer system to perform a convolution of a first model representing the cost over time of a product having a warranty and a second model representing the unreliability over time of the product. (pg 555, Examples; Table I)

**Referring to claim 37:**

The computer program stored in a tangible medium as recited in claim 35, wherein the convolution comprises a cumulative probability distribution of possible actual costs of the product.

**Referring to claim 38:**

The computer program stored in a tangible medium as recited in claim 37, wherein the computer program directs the computer system to perform a weighted average of the cumulative probability distribution and possible actual costs to product and effective cost of the product.

**Referring to claim 39:**

The computer program stored in a tangible medium as recited in claim 38, wherein the computer program directs the computer system to produce the effective cost of the product for each of a plurality of warranty periods. (pg 555, Examples; Table I)

**Referring to claim 40:**

The computer program stored in a tangible medium as recited in claim 39, wherein the computer program directs the computer system to produce an effective selling price of a replacement product for the product. (pg 554, Pro Rata Warranty)

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karmarkar, U.S., "future Costs of Service Contracts for Consumer Durable Goods," AIEE Transactions, 10, pp. 380-387 (1978).

**Referring to claim 6:**

Karmarkar does not expressly disclose the following:

The method as recited in claim 2, wherein the convolution produces a cumulative probability that the product will have an actual cost for each of a plurality of actual costs.

However, Karmarkar does disclose that the properties of reliability and durability enter into the costs incurred in providing continuous service over the life of the product, however the improvement of these characteristics can only be bought at a price-that of increased design costs which are going to be reflected in the price of the product. (pg 380, ¶ 2) Therefore, for a producer to be profitable selling a product and provide warranty for the product, it is obvious that the producer should calculate the probability that the product will have an actual cost for each of a plurality of actual costs so the producer can properly price the product and the warranty.

**Referring to claim 7:**

The method as recited in claim 6, wherein calculating an effective cost of a product with a product warranty comprises taking the average of the plurality of actual costs, each actual cost being weighted by its respective cumulative probability.

(complete article)

13. Claims 23-29, 36, 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balcer, Y and I. Sahin, "Replacement Costs under Warranty; Cost Moments and Time Variability," Oper. Res., 34(1986), 554-559.

**Referring to claims 23 and 24 and 25:**

An analysis tool for a product having a warranty, comprising:

A computer system;

A statistical model of a product's life stored in the computer system; and  
economic data for the product stored in the computer system;

Wherein the analysis tool is operable to provide a user with quantified economic information for a plurality or warranty scenarios based on the statistical model of a product's life and the economic data for the product.

The analysis tool as recited in claim 23, further comprising a computer program stored in the computer system, wherein the computer program directs the computer system to produce the quantified economic information.

The analysis tool as recited in claim 23, wherein the quantified economic information is displayed graphically by the computer system.

Balcer et al disclose analysis tool to provide a user with quantified economic information for a plurality or warranty scenarios based on the statistical model of a product's life and the economic data for the product. However, Balcer et al does not expressly disclose a computer system performing the calculations. The examiner submits that it would be obvious to perform such calculations on a computer system and

output the results. One would be motivated to perform the calculations on a computer system because it would provide solutions faster.

**Referring to claim 26:**

The analysis tool as recited in claim 23, wherein the economic data comprises actual product cost for a product having a failure during a warranty period and actual product cost for a product having a failure during a non-warranty period. (pg 554, Pro Rata Warranty)

**Referring to claim 27:**

The analysis tool as recited in claim 23, wherein the economic data comprises replacement product selling price during a warranty period and replacement product selling price during a non-warranty period. (pg 554, ¶1)

**Referring to claim 28:**

The analysis tool as recited in claim 23, wherein the quantified economic information comprises effective cost data for the product over a range of warranty durations. (pg 555, Examples; Table I)

**Referring to claim 29:**

The analysis tool as recited in claim 23, wherein the quantified economic information comprises effective selling price data over a replacement product over a range of warranty durations. (pg 554, Pro Rata Warranty)

**Referring to claim 36:**

Balcer et al does not disclose the following:



The computer program stored in a tangible medium as recited in claim 35, wherein the second data set representing the unreliability over time of the product comprises a Weibull distribution.

The examiner takes official notice that the Weibull distribution is not novel and have been known to one having ordinary skill in the art at the time the invention was made.

**Referring to claims 42, 43, 44:**

The computer program stored in a tangible medium as recited in claim 39, wherein the computer program directs the computer system to graphically display the effective cost of a product as a function of warranty.

The computer program stored in a tangible medium as recited in claim 40, wherein the program directs a computer system to graphically display the effective selling price of a replacement product as a function of warranty.

The computer program stored in a tangible medium as recited in claim 41, wherein the program directs a computer system to graphically display profit margin of a product as a function of warranty.

Balcer et al disclose calculating effective cost, effective selling price and profit margin. Balcer et al does not expressly disclose displaying the results on a computer system. The examiner submits that it is reasonable to believe that Balcer et al's calculations are done on a computer system due to its superior accuracy and speed, therefore it must have a display associated with the calculation computer to output the results to the users. Therefore, it would have been obvious to one having ordinary skill

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in the art at the time the invention was made to do the calculations on a computer system and have the calculation program direct the system to output the resulting data.

14. Claims 10, 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karmarkar in view of Balcer, Y and I. Sahin.

**Referring to claim 10:**

Karmarkar does not disclose the following:

The method as recited in claim 1, further comprising the act of calculating an effective selling price of a replacement product for the product having a warranty.

Balcer et al discloses calculating an effective selling price of a replacement product for the product having a warranty. (pg 554, Pro Rata Warranty; pg 555, Examples) Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Karmarkar's publication to include calculating price of a replacement product. One would be motivate to do so because the two articles are based on the save field of endeavor, both are about issues of product replacement and pricing and profitability of providing warranties.

**Referring to claim 11:**

Karmarkar discloses:

The method as recited in claim 10, further comprising the act of calculating a variation in profit of a product as a function of the product's warranty. (pg 381 ¶ 2)

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15. Claims 16, 17, 20, 22, 30, 34, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balcer, Y and I. Sahin in view of Karmarkar.

**Referring to claim 16:**

Balcer et al does not disclose the following:

The method as recited in claim 12, wherein developing a statistical model of a product's life comprises collecting data from previous failures of the same or similar products.

Karmarkar discloses using historical data in the calculations. (pg 385, I and ii) Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Balcer et al's publication to include collecting and using historical data. One would be motivate to do so because the two articles are based on the save field of endeavor, both are about issues of product replacement and pricing and profitability of providing warranties.

**Referring to claim 17:**

Balcer et al discloses:

The method as recited in claim 16, wherein developing a statistical model comprises calculating a cumulative probability of failure of the product as a function of time. (pg 555, Examples)

**Referring to claim 20:**

Balcer et al does not expressly disclose the following:

The method as recited in claim 19, further comprising the act of graphically representing the effective selling price of a replacement product as a function of the product warranty.

The examiner submits that graphical output of the results of the calculation is an inherent function of Karmarkar's article. Karmarkar provides specific motivation by providing several graphs representing various elements and results of the calculations in the article. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Balcer et al's publication to include outputting calculated data graphically. One would be motivate to do so because the two articles are based on the save field of endeavor, both are solving issues of product replacement and pricing and profitability of providing warranties.

**Referring to claims 22, 30, 34, 41:**

Balcer et al does not expressly disclose the following:

The method as recited in claim 21, further comprising the act of calculating a variation in profit of a product as a function of the product's warranty.

The analysis tool as recited in claim 23, wherein the quantified economic information comprises effective profit margin data for the product over a range of warranty durations.

The computer program stored in a tangible medium as recited in 31, wherein the quantitative economic data is a variation in profit margin of a product as a function of the warranty.

The computer program stored in a tangible medium as recited in claim 40, wherein the computer program directs the computer system to produce an effective profit margin for the product from the effective cost of the product and the effective selling price of a replacement product for the product.

However, Balcer et al disclose that Blischke and Scheuer (1875, 1981) have analyzed both types of policy with regard to long-run, time-average costs to the buyer, and profits to the seller (pg 554, ¶2). Therefore, it is inherent that the producer know what the profit margin of a product is having a warranty to be able to calculate the profits.

Also Karmarkar discloses that the properties of reliability and durability enter into the costs incurred in providing continuous service over the life of the product, however the improvement of these characteristics can only be bought at a price that of increased design costs which are going to be reflected in the price of the product. Therefore, for a producer to be profitable selling a product and provide warranty for the product the producer should calculate the profit margin that the product will have with respect to the various warranty programs so the producer can properly price the product and the warranty.

### ***Conclusion***

16. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are

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applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that the applicant, in preparing the responses, fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat No. 6,366,199 to Osborn et al.

U.S. Pat No. 5,737,581 to Keane.

U.S. Pat No. 6,070,130 to Gutmann et al.

U.S. Pat No. 6,578,001 to Schramek.

U.S. Pub No. 2002/0078403 to Gullo et al.

Berg, M., "A Marginal Cost Analysis for Preventive Replacement Policies,"

European Journal of Operational Research, 4, pp.136-142 (1980)

Frees, E. W., "On Estimating the Cost of a Warranty," J. Business and Economic Statist., 6(1988), 79-86

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Gilchrist, W., "Modelling failure modes and effects analysis," International Journal of Quality & Reliability Management v10n5 pp. 16-23, 1993.

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Jackson, D. W. J., and Ostrom, L., "Life Cycle Costing in Industrial Purchasing,"  
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Menzeffricke, U., "Prediction of warranty costs during a given period of time."  
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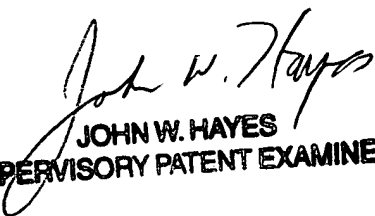
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Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Rutao Wu whose telephone number is (571)272-3136.  
The examiner can normally be reached on Mon-Fri 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, John Hayes can be reached on (571)272-6708. The fax phone number for  
the organization where this application or proceeding is assigned is 571-273-8300.

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nw

  
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